

**ENVIRONMENTAL NOTIFICATION FORM**

**RUNWAY 5/23 SAFETY AREA IMPROVEMENTS**

**LAURENCE G. HANSCOM FIELD  
BEDFORD, MASSACHUSETTS**

**APPENDIX A**

**REQUIRED PERMITS**

**APPENDIX A – REQUIRED PERMITS**

Federal, state and local agencies from which permits or other action are expected to be required:

<b><u>FEDERAL Agency</u></b>	<b><u>Permit/Approval</u></b>
Federal Aviation Administration	<ul style="list-style-type: none"><li>• Environmental Assessment (in combination with MEPA EIR); compliance with National Environmental Policy Act</li><li>• Modifications from Standards</li><li>• Approval of modifications to the Airport Layout Plan (ALP)</li></ul>
U. S. Army Corps of Engineers	<ul style="list-style-type: none"><li>• Section 404 of Clean Water Act – Individual Permit</li></ul>
U. S. Environmental Protection Agency	<ul style="list-style-type: none"><li>• NPDES (National Pollutant Discharge Elimination System) Permit for Construction Activities</li></ul>
<b><u>STATE Agency</u></b>	<b><u>Permit/Approval</u></b>
Executive Office of Environmental Affairs, MEPA Office	<ul style="list-style-type: none"><li>• Environmental Impact Report; MEPA Certification</li></ul>
Massachusetts (MA) Department of Environmental Protection (DEP)/ Northeast Regional Office	<ul style="list-style-type: none"><li>• Section 401 of Clean Water Act – Individual Water Quality Certification</li><li>• Superseding Order of Conditions – Wetland Permit</li></ul>
MA DEP – Commissioner’s Office	<ul style="list-style-type: none"><li>• Variance/Final Order of Conditions – Wetland Permit</li></ul>
Massachusetts Historical Commission	<ul style="list-style-type: none"><li>• Determination of No Adverse Effect</li></ul>
MA Natural Heritage and Endangered Species Program	<ul style="list-style-type: none"><li>• Conservation and Management Permit</li></ul>

**LOCAL Agency**

**Permit/Approval**

Town of Bedford  
Conservation Commission

- Order of Conditions under Massachusetts Wetlands Protection Act/Regulations  
(Note: not subject to Town of Bedford Wetland Protection Bylaw)

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**APPENDIX B**

**ENF CIRCULATION LIST**

**APPENDIX B - ENF CIRCULATION LIST**

MEPA Office: (2 copies with add'l copy of ENF Form)	Secretary Stephen R. Pritchard Executive Office of Environmental Affairs ATTN: MEPA Office 100 Cambridge Street, Suite 900 Boston, MA 02114
Executive Office of Environmental Affairs Policy Director	Mr. James Stergios Undersecretary for Policy c/o Nancy Gabriel-Sackie 100 Cambridge Street, Suite 900 Boston, MA 02114
Department of Environmental Protection Boston Office	Commissioner's Office One Winter Street Boston, MA 02108
Department of Environmental Protection Wetlands Protection Program	Michael Stroman Dir. of Wetlands and Waterways One Winter Street Boston, MA 02108
Department of Environmental Protection Northeast Regional Office	DEP/Northeast Regional Office ATTN: MEPA Coordinator One Winter Street Boston, MA 02108
Executive Office of Transportation	Executive Office of Transportation ATTN: Environmental Reviewer 10 Park Plaza, Room 3510 Boston, MA 02116-3969
Massachusetts Highway Department Development Office	Massachusetts Highway Department Public/Private Development Unit 10 Park Plaza Boston, MA 02116
Massachusetts Highway Department District Office	MHD – District #4 ATTN: MEPA Coordinator 519 Appleton Street Arlington, MA 02474
Massachusetts Aeronautics Commission	Jeffrey Senterman Environmental Planner

	10 Park Plaza, Suite 3510 Boston, MA 02116
Massachusetts Historic Commission	The MA Archives Building 220 Morrissey Boulevard Boston, MA 02125
Regional Planning Agency	Metropolitan Area Planning Council 60 Temple Place – 6 <sup>th</sup> Floor Boston, MA 02111
Town Governments	See Below
Coastal Zone Community	NOT APPLICABLE
Agricultural Site	NOT APPLICABLE
Significant Habitat or Endangered Species	Natural Heritage and Endangered Species Program Commonwealth of Massachusetts Route 135 Westborough, MA 01581
Urban Parks	NOT APPLICABLE
Water Supply Impacts	NOT APPLICABLE
Public Health Impacts	NOT APPLICABLE
Energy Facilities Site	NOT APPLICABLE
MWRA Jurisdictional Site	NOT APPLICABLE
MTBA Jurisdictional Site	NOT APPLICABLE

### **TOWN GOVERNMENT CIRCULATION**

#### **BEDFORD**

Board of Selectman  
ATTN: Town Administrator  
Town Hall  
10 Mudge Way  
Bedford, MA 01730

Board of Health  
ATTN: Health Director  
Town Hall  
10 Mudge Way  
Bedford, MA 01730

Phone: (781) 275-1111  
Fax: (781) 275-6310

Conservation Commission  
ATTN: Conservation Administrator  
Town Hall  
10 Mudge Way  
Bedford, MA 01730  
Phone: (781) 275-6211  
Fax: (781) 275-1334

Phone: (781) 275-6507  
Fax: (781) 275-6157

Planning Department  
ATTN: Planning Director  
Town Hall  
10 Mudge Way  
Bedford, MA 01730  
Phone: (781) 275-1548  
Fax: (781) 275-0537

Bedford Free Public Library  
7 Mudge Way  
Bedford, MA 01730  
Phone: (781) 275- 9440  
Fax: (781) 275-3590

**CONCORD**

Board of Selectman  
Town House  
P O Box 535  
Concord, MA 01742  
Phone: (978) 318-3001  
Fax: (978) 318-3002

Board of Health  
ATTN: Health Administrator  
141 Keyes Road  
Concord, MA 01742  
Phone: (978) 318-3275  
Fax: (978) 318-3281

Natural Resources Commission  
ATTN: Natural Resources Administrator  
141 Keyes Road  
Concord, MA 01742  
Phone: (978) 318-3285  
Fax: (978) 318-3291

Planning Department  
ATTN: Planning Director  
141 Keyes Road  
Concord, MA 01742  
Phone: (978) 318-3290  
Fax: (978) 318-3291

Concord Free Public Library  
129 Main St.  
Concord, MA 01742  
Tel: (978) 318-3300  
Fax: (978) 318-3344

**LINCOLN**

Board of Selectman  
ATTN: Town Administrator  
16 Lincoln Road

Board of Health  
ATTN: Health Administrator  
16 Lincoln Road

Lincoln, MA 01773  
Phone: (781) 259-2600  
Fax: (781) 259-1677

Lincoln, MA 01773  
Phone: (781) 259-2613  
Fax: (781) 259-1677

Conservation Commission  
ATTN: Conservation Director  
16 Lincoln Road  
Lincoln, MA 01773  
Phone: (781) 259-2612  
Fax: (781) 259-1677

Planning Board  
ATTN: Planning Administrator  
16 Lincoln Road  
Lincoln, MA 01773  
Phone: (781) 259-2610  
Fax: (781) 259-1677

Lincoln Public Library  
Bedford Road  
Lincoln MA 01773  
Phone: 781-259-8465  
Fax: 781-259-1056

## **LEXINGTON**

Board of Selectmen  
ATTN: Town Administrator  
Town Hall  
1625 Massachusetts Ave.  
Lexington, MA 02420  
Phone: (781) 862-0500 x208  
Fax: (781) 863-9468

Board of Health  
ATTN: Health Director  
Town Hall  
1625 Massachusetts Ave.  
Lexington, MA 02420  
Phone: (781) 862-0500 x200  
Fax: (781) 861-2780

Conservation Commission  
ATTN: Conservation Administrator  
Town Hall  
1625 Massachusetts Ave.  
Lexington, MA 02420  
Phone: (781) 862-0500 x226  
Fax: (781) 861-2780

Planning Department  
ATTN: Planning Director  
Town Hall  
1625 Massachusetts Ave.  
Lexington, MA 02420  
Phone: (781) 862-0500 x245  
Fax: (781) 861-2748

Cary Memorial Library  
1874 Massachusetts Ave  
Lexington, MA 02420-5303  
(781) 862-6288  
Fax: (781) 862-7355

**NOTE: The ENF will also be available on Massport's web site, [www.massport.com](http://www.massport.com).**



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**LAURENCE G. HANSCOM FIELD  
BEDFORD, MASSACHUSETTS**

**APPENDIX C**

**PUBLIC NOTICE OF ENVIRONMENTAL  
REVIEW**

***Commonwealth of Massachusetts***  
***Executive Office of Environmental Affairs***

***MEPA Office***

100 Cambridge Street, Suite 900  
Boston, MA 02114  
Telephone 617-626-1020

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**PUBLIC NOTICE OF ENVIRONMENTAL REVIEW**

**PROJECT:** Runway 5/23 Safety Area Improvements

**LOCATION:** L. G. Hanscom Field, Bedford, Massachusetts

**PROPONENT:** Massachusetts Port Authority (Massport)

**The undersigned is submitting an Environmental Notification Form ("ENF") to the Secretary of Environmental Affairs on or before August 1, 2005.**

**This will initiate review of the above project pursuant to the Massachusetts Environmental Policy Act ("MEPA", M.G.L. c. 30, s.s. 61, 62 62H). Copies of the ENF may be obtained from:**

Thomas W. Ennis, Senior Project Manager Massachusetts Port Authority (Massport)  
Logan Office Center, One Harborside Drive, East Boston, MA 02128  
Phone: (617) 568-3546 Fax: (617) 568-3518 Email: [tennis@massport.com](mailto:tennis@massport.com)

**Copies of the ENF are also being sent to the Conservation Commissions and Planning Boards of Bedford, Concord, Lincoln, and Lexington where they may be inspected.**

**The Secretary of Environmental Affairs will publish notice of the ENF in the Environmental Monitor, will receive public comments on the project for 20 days (please note: Massport has requested an extended review period of 44 days, with the public comment period ending on Friday September 23, 2005), and will then decide, within ten days, if an Environmental Impact Report is needed. A site visit and consultation session on the project may also be scheduled. All persons wishing to comment on the project, or to be notified of a site visit or consultation session, should write to the Secretary of Environmental Affairs, 100 Cambridge Street, Suite 900, Boston, Massachusetts 02114, Attention: MEPA Office, referencing the above project.**

**By McFarland-Johnson, Inc. for Massport**

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**ENVIRONMENTAL NOTIFICATION FORM**

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**LAURENCE G. HANSCOM FIELD  
BEDFORD, MASSACHUSETTS**

**APPENDIX D**

**FAA LETTER REGARDING SELECTED  
ALTERNATIVE**



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

Burlington, MA 01803-5299

March 29, 2002

Ms. Laurie K. Cullen  
Program Manager  
Massachusetts Port Authority  
One Harborside Drive, Suite 200S  
East Boston, MA 02128-2909

Dear Ms. Cullen:

Reference is made to the report prepared by the Louis Berger Group, HNTB Corporation entitled "L.G. Hanscom Field Runway 5-23 Safety Area Supplemental Feasibility Analysis", dated March 2001.

We have accepted the recommended alternative contained in the report and determined that the existing Runway 5-23 safety area can be improved to enhance safety but will not meet current standards. The safety area beyond runway end 5 is 500 feet wide and 590 feet long on the west edge and 700 feet long on the east edge. On the runway 23 end it is 300 feet wide and 890 feet long. The width of the safety area will be constructed to the 500-foot width standard.

This determination is based on our understanding of the operation and configuration of the airport and on current and anticipated aircraft use and volume. The safety area should be shown on the next revision to the airport layout plan.

Sincerely,

  
William M. Cronan  
Senior Airport Planner

cc:  
Barbara Patzner, Airport Manager  
Massachusetts Port Authority



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**APPENDIX E**

**GRASSLAND MANAGEMENT PLAN**



# **L.G. Hanscom Field Grassland Management Program**



Prepared by:

Massachusetts Port Authority  
**Environmental Planning and Permitting Unit**  
Economic Planning and Development Department

**January 2004**

## **Table of Contents/Outline**

Introduction	<b>2</b>
Background	<b>2</b>
Regulatory Context	<b>3</b>
Grassland Management Program Goals and Objectives	<b>5</b>
Grassland Management Program Recommendations	<b>4</b>
Bibliography	<b>7</b>

Figure 1 Site Locus

Figure 2 NHESP Priority Habitats of Rare Species

Figure 3 Hanscom Grassland Management Areas

# Hanscom Field Grassland Management Program

## Introduction

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L.G. Hanscom Field (BED) is owned and operated by the Massachusetts Port Authority (Massport). The airport is situated on approximately 1,300 acres located in the towns of Bedford, Concord, Lexington and Lincoln, MA (Figure 1). Hanscom Field is primarily a general aviation airport, but also supports limited commercial operations and military flights. The airport consists of two paved runways, Runway 11/29 is 7,001 feet long and Runway 5/23 is 5,106 feet long. In 2003, Hanscom Field supported approximately 200,000 aircraft operations (landings and takeoffs). Nearly one-third of its annual operations are pilot training flights.

This *Grassland Management Program* outlines a series of guidelines for maintenance of portions of the grass infield areas between runways and taxiways at BED as well as selected grassed approach areas. **As noted throughout this document, the goal of grassland management must be carefully balanced with the airport's primary goal of maintaining aviation safety.** It is within the context of aviation safety that this program has been developed. As is discussed below, a key goal of the program is the reduction of wildlife hazards and evidence suggests that properly managed grasslands will support that aviation safety goal.

While Massport has taken a lead in the development of this program, finalization of the plan involved coordination with the U.S. Department of Agriculture/Wildlife Services, the Federal Aviation Administration (FAA), MA Natural Heritage and Endangered Species Program and MA Audubon.

## Background

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Grasslands are a vegetative community that is gradually disappearing in New England; a region that once supported vast natural and managed grasslands. This change is a result of natural succession, development, and the decline in farming. Many of the region's larger grasslands have historically supported large and diverse wildlife populations. As a result of the incremental loss of grasslands, many of these species are now at-risk.

Many airports maintain extensive grass infield areas between runways and taxiways; hence, airports often unintentionally provide some of the best, and last, grassland habitat in the region. This relationship can be a significant aviation safety concern, however, when there is an increase of the risk, frequency and potential severity of wildlife-aircraft collisions.

Similar to other airports in the Northeast, Hanscom Field has provided habitat for a number of grassland birds, several of which have been designated by the MA Natural Heritage and Endangered Species Program (NHESP) as threatened (T) or





**Grassland Management Program - Hanscom Field  
Site Locus**

**Figure 1**

Source: USGS Quadrangle Maps for Billerica (1987), Reading (1987), Maynard (1987) and Boston North (1985)

endangered (E). These include the grasshopper sparrow (T) (*Ammodramus savannarum*) and the upland sandpiper (E) (*Bartramia longicauda*). Hanscom Field has also been observed to support other grassland bird species considered to be in decline, but not specifically protected by state or federal regulation.

## Regulatory Context

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Based upon information included in the NHESP *Massachusetts Natural Heritage Atlas (11<sup>th</sup> Edition, July 2003)*, substantial portions of Hanscom Field are identified as "Priority Habitats of Rare Species" (Figure 2). Certain activities within the habitats of rare species are subject to the MA Endangered Species Act (MESA) of 1990 and its implementing regulations of 1992 (MGL Chapter 131A).

Within the context of MESA, species are listed as endangered, threatened or special concern species. **Endangered** (E) species are "native species which are in danger of extinction throughout all or part of their range, or which are in danger of extirpation from Massachusetts, as documented by biological research and inventory." **Threatened** (T) species are "native species which are likely to become endangered in the foreseeable future, or which are declining or rare as determined by biological research and inventory." **Special Concern** (SC) species are "native species which have been documented by biological research or inventory to have suffered a decline that could threaten the species if allowed to continue unchecked, or which occur in such small numbers or with such restricted distribution or specialized habitat requirements that they could easily become threatened within Massachusetts."

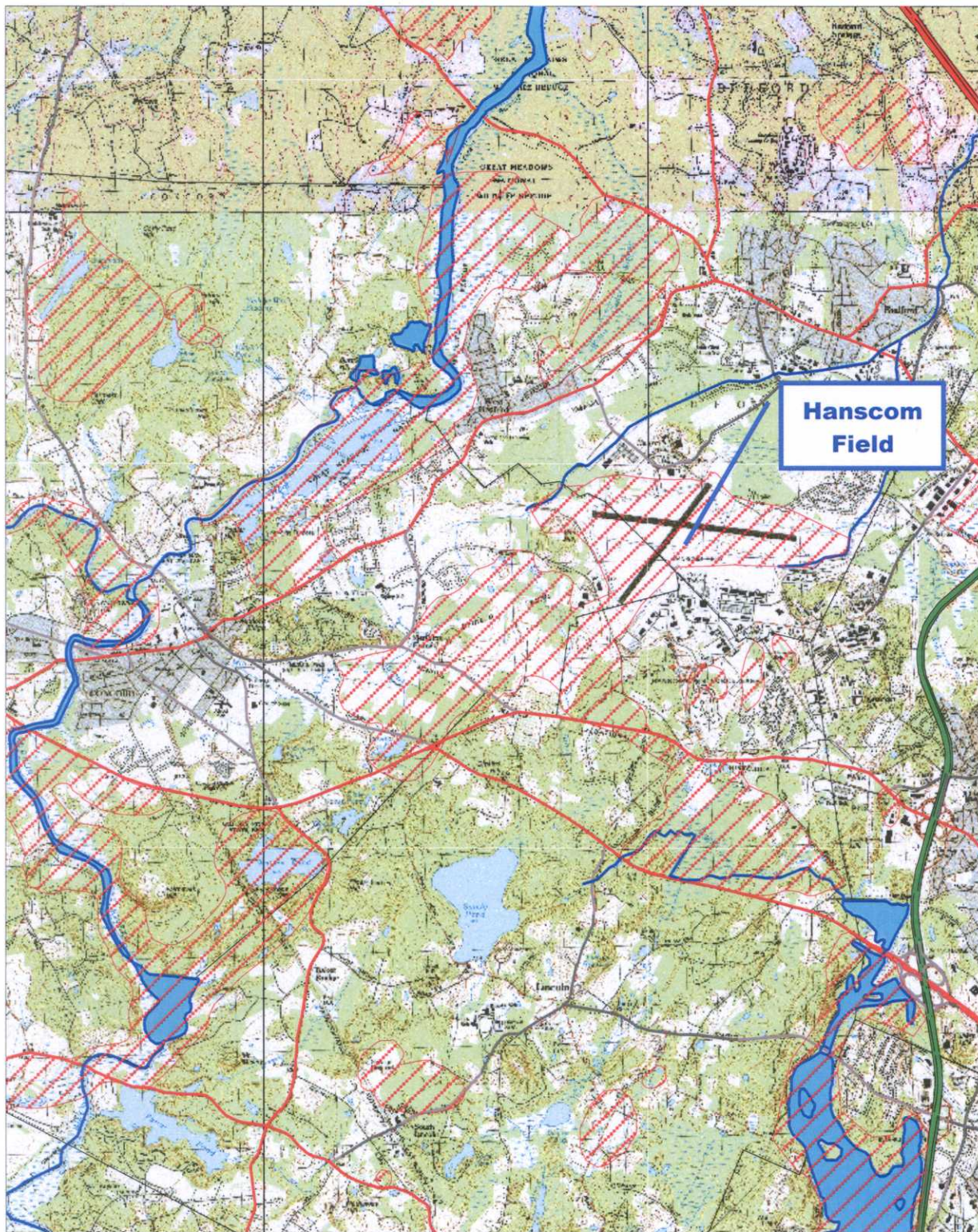
As stated above, Hanscom Field has been documented to support grasshopper sparrow (T) (*Ammodramus savannarum*) and the upland sandpiper (E) (*Bartramia longicauda*). No avian species of special concern (SC) are reported to exist at Hanscom Field.

In 1996, a series of grassland management recommendations were implemented at Hanscom Field together with a limited haying operation. While the management strategies were noted to result in an increase in grassland birds, the program was suspended in 1999 due to a dramatic increase in bird strikes (notably barn swallows) at Hanscom.

Recently, in addition to requirements pursuant to MESA, there has been ongoing interest by the Conservation Commissions of the Hanscom Area Towns, through the recent 2002 – 2006 Vegetation Management Plan (VMP) process, to establish a more formalized *Grassland Management Program* for Hanscom Field.

The grassland management recommendations described herein have been developed with consideration of the Federal Aviation Administration (FAA) Advisory Circular 150/5200-33, *Hazardous Wildlife Attractants on or near Airports*, which states that "**caution should be exercised to ensure that land use practices on or near airports do not enhance the attractiveness of the area to hazardous wildlife.**"





**Grassland Management Plan - Hanscom Field**  
NHESP Priority Habitats (PH) of Rare Species

Figure 2

Source: NHESP Heritage Atlas (11<sup>th</sup> Edition, July 2003)



## Grassland Management Program Goals and Objectives

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The goal of this program is to provide safe operating conditions at Hanscom Field and the conservation of listed grassland bird species. In this manner, the grassland management program strives to maintain appropriate habitat that is adequately and safely separated from airport operations. Field evidence suggests that properly managed grasslands can, in fact, reduce bird hazards at airports. According to MA Audubon guidance found at [http://www.massaudubon.org/Birds\\_&\\_Beyond/Grassland\\_Birds/large.html#burning](http://www.massaudubon.org/Birds_&_Beyond/Grassland_Birds/large.html#burning):

*"Mowing is essential in grasslands surrounding airfields to prevent growth of woody vegetation and comply with airport safety regulations. However, mowing can be manipulated to reduce mowing costs and benefit grassland birds. Ground-nesting birds found nesting at airfields should not pose a threat to aircraft because of their small size and low direct flight; in addition, managing for these species by leaving some areas unmowed during the summer can help discourage large flocking birds that prefer fields of very short grass, such as gulls, crows, and Canada geese, and are more likely to damage aircraft."*

Based upon information developed for the Hanscom Field Vegetation Management Plan 2002-2006, resources available through NHESP, MA Audubon and other sources, a set of grassland management techniques have been developed for Hanscom Field, with the specific goal of managing grasslands at Hanscom primarily for Grasshopper sparrows and upland sandpiper as well as other declining grassland bird species.

It is anticipated that the recommendations included herein will be used as **guidelines** for grassland management at Hanscom Field. The plan has been developed to be flexible enough to allow for the proper management of target hazardous wildlife species without compromising aviation safety. Particular attention will also be paid to the effect that higher grass heights could have on attracting other hazardous wildlife species such as deer, turkey, pheasant, swallows (flocks), raptors, coyote, and fox.

If after implementation of these recommendations there is a documented increase in hazardous wildlife, bird strikes or other safety issues, the plan will be **immediately** modified. However, NHESP will be notified of any modification of this plan and the process will involve timely notification of the Hanscom town conservation commissions.

## Draft Grassland Management Recommendations

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The following section outlines a series of grassland management guidelines for implementation at L.G. Hanscom Field (BED) in the towns of Bedford, Concord and Lincoln, MA [Note: there are no grassland areas at BED within the Town of Lexington]. The management of grassland areas on the airport property will be conducted where such management is compatible with airport operations, and does not result in the attraction of wildlife species that are known to be aviation hazards. While the focus of this plan is the careful management of grasslands in close

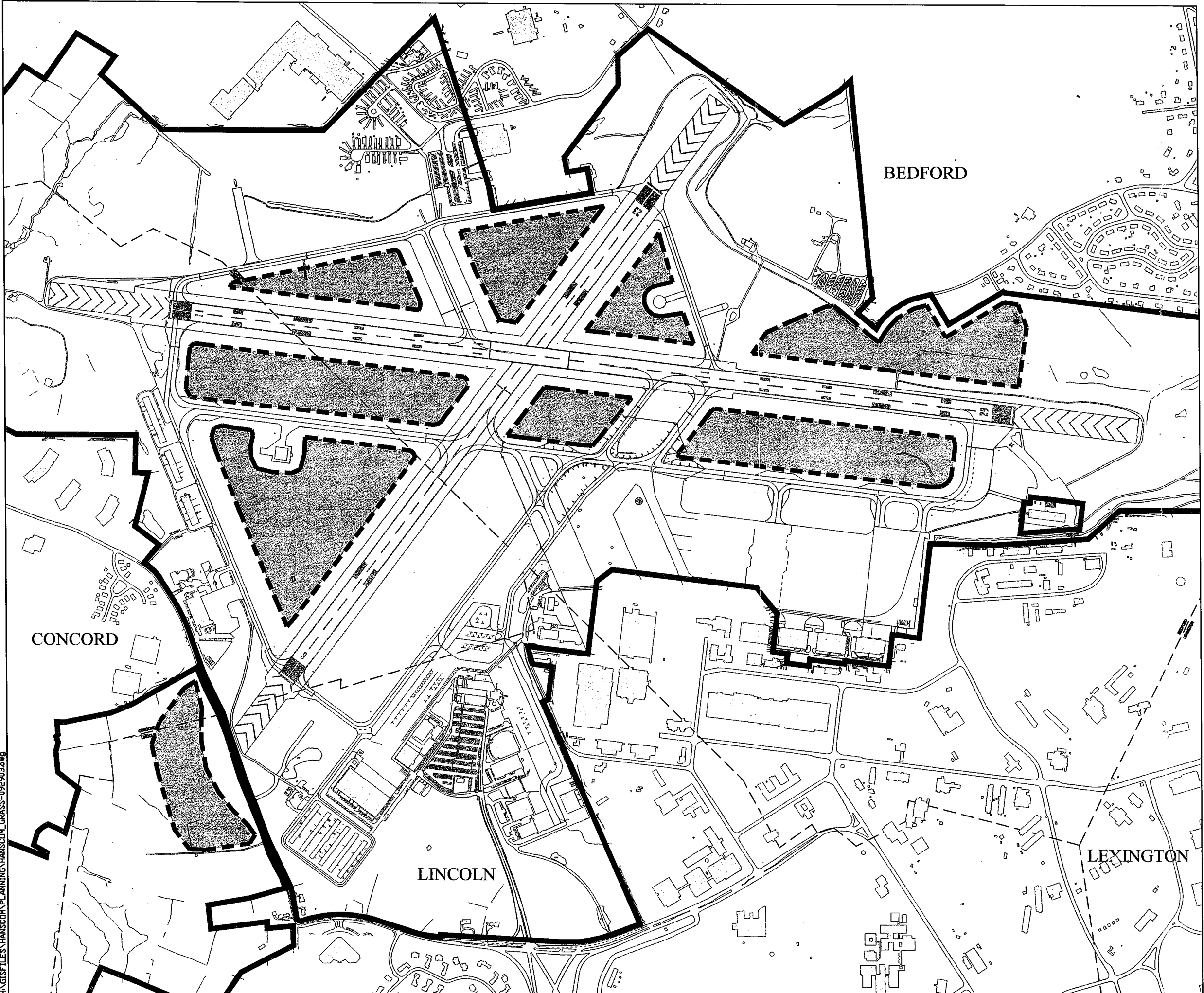
proximity to airport operating surfaces, the guidelines are also intended to cover selected airport grasslands outside of the fenced airfield areas. Figure 3 illustrates the general limits of grassland management areas.

These guidelines will be followed until such time that conditions change at BED or there are indications of increased bird strike hazards or other potential compromises to aviation safety. In the event field conditions necessitate revision of the plan, modification will be implemented *immediately* to reduce the aviation safety risk. Changes to the plan will be forwarded to the MA Natural Heritage and Endangered Species Program (NHESP) and the Hanscom town conservation commissions.

1. **Conduct annual pre-breeding season review of grassland management procedures and protected grassland birds identification** (upland sandpiper and grasshopper sparrow) **with operations staff.**
2. **Develop an annual mowing schedule** that would maintain managed grassland areas at a height of 6-15 inches.
3. **Develop a plan of the managed areas** The plan shall clearly designate managed areas. Where feasible, the areas shall be separated on the plan using existing, observable features in the field such as signage, hangars, pavement intersections, etc. By using such identifiers on the plan, mowing personnel can more easily identify the different mowing areas in the field. Mowing areas may be adjusted annually based on weather conditions.
4. **Mow Runway and Taxiway Safety Areas prior to May 1**, when feasible, to avoid conflicts with breeding. *[Runway and Taxiway Safety Areas are rectangular areas centered on the runway or taxiway centerlines that include both the runway/taxiway and shoulders. These safety areas are typically level turfed areas that are capable of supporting maintenance and rescue equipment and the occasional passage of an aircraft without causing major damage to the aircraft.]*
5. **Maintain mowed strips along runways (250-feet from runway centerlines) and taxiways (85-feet from taxiway centerlines)** throughout the breeding season to discourage birds from nesting in these areas. Maintenance of the safety areas to the ground elevation is necessary throughout the year to comply with FAA Part 139 certification criteria. The safety areas include all areas immediately adjacent to paved surfaces. Where these adjacent areas are less than 50 feet in width, they will not be included in this management program.

Most grassland birds prefer the presence of a range of grass heights within the habitat area. By mowing the airport safety areas throughout the growing season, nesting is discouraged. A spring season mowing of these areas prior to nest building activities will discourage nesting in safety areas. By completing an early season mowing, the breeding pairs will opt for the adjacent undisturbed habitat management areas, thus confining the nesting away from the airport operations.

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# L.G. Hanscom Field

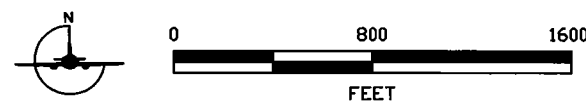
*Approximate Limits of  
Recommended Grassland  
Management Areas*

## Legend:

- Approximate Massport Property Lines
- ▨ Approximate Grassland Management Areas
- ▨ Areas to be Mowed Throughout Growing Season

## Notes:

1. All other grass areas to be mowed throughout the mowing season.
2. This plan illustrates general areas covered by Grassland Management Plan. Please refer to section of this report on Grassland Management Recommendations for detailed plan guidance.
3. This plan is intended for informational purposes only and no use may be made of the same without the express written permission of the Massachusetts Port Authority ("Massport"). Massport does not certify the accuracy, information or title to the properties contained in this plan nor make any warranties of any kind, express or implied, in fact or by law, with respect to any boundaries, easements, restrictions, claims, overlaps or other encumbrances affecting such properties.



L.G. Hanscom Field  
Bedford, Concord, Lexington & Lincoln, MA



Massachusetts Port Authority  
Economic Planning & Development Department  
January 2004

6. **Restrict mowing during the breeding (nesting and brood-rearing) season.** (May 1 to July 31) on designated portions of airfield not directly adjacent to runways and taxiways. (Figure 3). Late July typically represents the end of the brood season for most grassland birds, including those species which commonly produce a second brood such as grasshopper sparrow.
7. **Conduct pre-mowing field reconnaissance to observe and mark locations of nesting birds** in "critical areas" [see safety area recommendation #4] along runways and taxiways. Mark and maintain 50-foot diameter unmowed buffer around identified nesting areas until birds have fledged. Avoid mowing marked areas until birds have fledged.
8. **Inspect grassland management areas for young prior to mowing.** The August 1<sup>st</sup> date is to be used as a guide for the onset of mowing of the protected areas. A general inspection of the management unit should be completed by Massport Operations staff to inspect for active nests. Outside agencies such as USDA and or MA Audubon may also be invited to participate in these activities. In the event active nests are identified at this time, mark and maintain 50-foot diameter unmowed buffer around identified nesting areas until birds have fledged. Avoid mowing marked areas until birds have fledged. A reinspection scheduled shall be developed to determine when mowing can resume.
9. **Avoid, as practical, activities on grassland portions of airfield and approach areas** not directly adjacent to runways and taxiways during the breeding season (May 1 to July 31). This would include activities such as parking.



## **Bibliography**

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[http://www.massaudubon.org/Birds\\_&\\_Beyond/Grassland\\_Birds/large.html#burning](http://www.massaudubon.org/Birds_&_Beyond/Grassland_Birds/large.html#burning)

<http://www.state.ma.us/dfwele/dfw/nhesp/nhrare.htm>

Audubon Society of New Hampshire, Upland Sandpipers at Pease, 1995 – Final Report, December 1995.

Department of the Airforce, 102D Fighter Wing, Otis ANG Base Grassland Management Plan, August 2002

Dufresne-Henry, L.G. Hanscom Field 2002-2006 Vegetation Management Plan, March 2002.

Edwards and Kelcey, Worcester Airport 5 Year Plan of Improvements, Draft Supplemental EIS/EIR, December 1994.

Massachusetts Aeronautics Commission. Grassland Habitat Management Plan – Carver State Forest, Plymouth Municipal Airport Runway Protection Zone. September 1997.

Melvin, S.M. Memo to NHESP File: Updated Recommendations for Managing habitats of breeding upland sandpipers and Grasshopper Sparrows at airfields and military bases in Massachusetts. May 1994

Natural Heritage and Endangered Species Program. Massachusetts Natural Heritage Atlas, 11<sup>th</sup> Edition, 2003.

Rizzo Associates, 2000 L.G. Hanscom Field Environmental Status and Planning Report, July 2002